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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/803,593	03/09/2001	Matthew S. Blaha	BLAHA 2	8188
27964	7590	04/21/2004	EXAMINER	
HITT GAINES P.C. P.O. BOX 832570 RICHARDSON, TX 75083			PATHAK, SUDHANSHU C	
			ART UNIT	PAPER NUMBER
			2634	

DATE MAILED: 04/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/803,593	BLAHA, MATTHEW S. <i>mu</i>	
	Examiner	Art Unit	
	Sudhanshu C. Pathak	2634	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on March 9th, 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on March 9th, 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)):
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152). |
| Paper No(s)/Mail Date <u>1</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-to-20 are pending in the application.

Specification

2. The disclosure is objected to because of the following informalities:

The specification on Page 3, line 23 discloses the US Patent 3,961,280 to be issued on June 1st, 1996, this should actually be June 1st, 1976.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 4, 6, 8, 11 & 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Sampei (3,961,280).

Regarding to Claims 1 & 8, Sampei discloses a line driver couplable to a transmission path comprising a driver stage configured to send a signal along the transmission path (Fig. 1, element 5 & Abstract, lines 1-13 & Column 2, lines 40-68 & Column 3, lines 1-20); and a switching network, coupled to the driver stage, configured to adaptively select a power level to send the signal as a function of the characteristics of the transmission path (Fig. 1, element 6 & Fig. 3, elements 17, 6 & Abstract, lines 1-13 & Column 2, lines 40-68 & Column 3, lines 1-20, 52-68 & Column 4, lines 1-40).

Regarding to Claims 4 & 11, Sampei discloses a line driver amplifier comprising a driver stage configured to send a signal along the transmission path, and a switching network coupled to the driver stage, configured to adaptively select a power level of the transmitted signal as described above. Sampei further discloses the switching network to comprise a plurality of switches configured to adaptively select said power level (Fig. 3, elements 17, 6 & Fig. 9, elements 6, 25 & Column 3, lines 50-68 & Column 4, lines 1-24 & Column 6, lines 25-53).

Regarding to Claims 6 & 13, Sampei discloses a line driver amplifier comprising a driver stage configured to send a signal along the transmission path, and a switching network coupled to the driver stage, configured to adaptively select a power level of the transmitted signal as described above. Sampei further discloses the power levels to transmit the signal depending on the supply voltage levels, and the supply voltage is arbitrarily set depending on the circuit components and applications (Fig. 1, elements 8-9 & Fig. 3, elements 19-21 & Column 2, lines 40-68 & Column 3, lines 1-68 & Column 4, lines 1-24). Sampei further discloses a push-pull amplifier configuration for balancing the positive and negative polarity for the input / output waveforms (Fig. 9, Column 6, lines 25-52). Sampei does not specify a power level up to about 21 volts, there is no criticality in configuring the line driver power level up to the 21 volts, and this is only a matter of design choice.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 2, 5, 7, 9, 12, 14-16 & 18-20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sampei (3,961,280) in view of Sevic et al. (5,872,481).

Regarding to Claims 2, 7, 9 & 14, Sampei discloses a line driver amplifier comprising a driver stage configured to send a signal along the transmission path, and a switching network coupled to the driver stage, configured to adaptively select a power level of the transmitted signal as described above. However, Sampei does not disclose the driver stage comprising a plurality of amplifiers configured to amplify the transmission signal and the line driver to be implemented as a front end of a transceiver.

Sevic discloses a power amplifier comprising a plurality of amplifiers configured to amplify the signal to be transmitted (Abstract, lines 1-13 & Fig. 2, elements A1-A4 & Fig. 5A-B). Sevic further discloses implementing the power amplifier in a transceiver for mobile communications (Fig. 6 & Fig. 7). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention that Sevic teaches implementing a power amplifier in a wireless transceiver as a combination of plurality of individual amplifiers and this can be implemented as the driver stage of the line driver amplifier as described in Sampei so as to vary the transmitted power of the driver amplifier and improving the efficiency of the line driver amplifier depending on the transmission path characteristics. Furthermore, the line driver as

described in Sampei in view of Sevic can be implemented in a transceiver, thus satisfying the limitations of the claims.

Regarding to Claims 5 & 12, Sampei discloses a line driver amplifier comprising a driver stage configured to send a signal along the transmission path, and a switching network coupled to the driver stage, configured to adaptively select a power level of the transmitted signal as described above. However, Sampei does not disclose the switching network comprising a plurality of switches configured to couple an output of line driver to ground.

Sevic discloses a power amplifier comprising a plurality of amplifiers configured to amplify the signal to be transmitted (Abstract, lines 1-13 & Fig. 2, elements A1-A4 & Fig. 5A-B). Sevic further discloses a switching network comprising a plurality of switches configured to couple the driver to ground (Fig. 2, element 56 & Fig. 5A-B, element 56, 74-84 & Column 7, lines 55-67 & Column 8, lines 1-67 & Column 9, lines 1-59). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention that the switching network as described in Sevic can be implemented as a driver stage as described in Sampei so as to vary the power transmitted depending on the desired user, thus satisfying the limitations of the claim.

Regarding to Claims 15, Sampei discloses a line driver couplable to a transmission path comprising a driver stage configured to send a signal along the transmission path (Fig. 1, element 5 & Abstract, lines 1-13 & Column 2, lines 40-68 & Column 3, lines 1-20); and a switching network, coupled to the driver stage,

configured to adaptively select a power level to send the signal as a function of the characteristics of the transmission path (Fig. 1, element 6 & Fig. 3, elements 17, 6 & Abstract, lines 1-13 & Column 2, lines 40-68 & Column 3, lines 1-20, 52-68 & Column 4, lines 1-40). However, Sampei does not disclose the line driver to be implemented as a front end of a transceiver and further the transceiver comprising a conversion stage and a filter stage.

Sevic discloses a transceiver comprising a power amplifier for driving a signal to the transmission path (Fig. 6 & Fig. 7) further comprising a conversion stage that converts signals between an analog and digital domain (Fig. 7, elements 270, 272); and a filter stage, coupled to said conversion stage, that filters the signals (Fig. 7, elements 264, 266). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention that Sevic teaches implementing the line driver in a transceiver and processing the data to be transmitted so as to be compatible to the driver as described in Sampei for transmission over the transmission path, thus satisfying the limitations of the claim.

Regarding to Claim 16, Sampei in view of Sevic discloses a line driver amplifier comprising a driver stage configured to send a signal along the transmission path, and a switching network coupled to the driver stage, configured to adaptively select a power level of the transmitted signal, a conversion stage and a filter stage, as described above. However, Sampei does not disclose the driver stage comprising a plurality of amplifiers configured to amplify the transmission signal and the line driver to be implemented as a front end of a transceiver.

Sevic discloses a power amplifier comprising a plurality of amplifiers configured to amplify the signal to be transmitted (Abstract, lines 1-13 & Fig. 2, elements A1-A4 & Fig. 5A-B). Sevic further discloses implementing the power amplifier in a transceiver for mobile communications (Fig. 6 & Fig. 7). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention that Sevic teaches implementing a power amplifier in a wireless transceiver as a combination of plurality of individual amplifiers and this can be implemented as the driver stage of the line driver amplifier as described in Sampei so as to vary the transmitted power of the driver amplifier and improving the efficiency of the line driver amplifier depending on the transmission path characteristics. Furthermore, the line driver as described in Sampei in view of Sevic can be implemented in a transceiver, thus satisfying the limitations of the claims.

Regarding to Claim 18, Sampei in view of Sevic discloses a line driver amplifier comprising a driver stage configured to send a signal along the transmission path, and a switching network coupled to the driver stage, configured to adaptively select a power level of the transmitted signal, a conversion stage and a filter stage, as described above. Sampei further discloses the switching network to comprise a plurality of switches configured to adaptively select said power level (Fig. 3, elements 17, 6 & Fig. 9, elements 6, 25 & Column 3, lines 50-68 & Column 4, lines 1-24 & Column 6, lines 25-53). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention that Sampei in view of Sevic satisfies the limitations of the claim.

Regarding to Claim 19, Sampei in view of Sevic discloses a line driver amplifier comprising a driver stage configured to send a signal along the transmission path, and a switching network coupled to the driver stage, configured to adaptively select a power level of the transmitted signal, a conversion stage and a filter stage, as described above. However, Sampei does not disclose the switching network comprising a plurality of switches configured to couple an output of line driver to ground.

Sevic discloses a power amplifier comprising a plurality of amplifiers configured to amplify the signal to be transmitted (Abstract, lines 1-13 & Fig. 2, elements A1-A4 & Fig. 5A-B). Sevic further discloses a switching network comprising a plurality of switches configured to couple the driver to ground (Fig. 2, element 56 & Fig. 5A-B, element 56, 74-84 & Column 7, lines 55-67 & Column 8, lines 1-67 & Column 9, lines 1-59). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention that the switching network as described in Sevic can be implemented as a driver stage as described in Sampei so as to vary the power transmitted depending on the desired user, thus satisfying the limitations of the claim.

Regarding to Claim 20, Sampei in view of Sevic discloses a line driver amplifier comprising a driver stage configured to send a signal along the transmission path, and a switching network coupled to the driver stage, configured to adaptively select a power level of the transmitted signal, a conversion stage and a filter stage, as described above. Sampei further discloses the power levels to transmit the signal

depending on the supply voltage levels, and the supply voltage is arbitrarily set depending on the circuit components and applications (Fig. 1, elements 8-9 & Fig. 3, elements 19-21 & Column 2, lines 40-68 & Column 3, lines 1-68 & Column 4, lines 1-24). Sampei further discloses a push-pull amplifier configuration for balancing the positive and negative polarity for the input / output waveforms (Fig. 9, Column 6, lines 25-52). Sampei does not specify a power level up to about 21 volts, there is no criticality in configuring the line driver power level up to the 21 volts, and this is only a matter of design choice. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention that Sampei in view of Sevic satisfies the limitation of the claim.

7. Claim 3, 10 & 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sampei (3,961,280) in view of Sevic et al. (5,872,481) in further view of Lee (3,755,693).

Regarding to Claims 3, 10 & 17, Sampei in view of Sevic discloses a line driver amplifier comprising a driver stage, comprising a plurality of amplifiers, configured to send a signal along the transmission path, and a switching network coupled to the driver stage, configured to adaptively select a power level of the transmitted signal as described above. However, the references do not disclose the driver stage further comprising a reference circuit configured to provide a reference level.

Lee discloses a voltage reference circuit configured to provide a voltage reference level associated with the corresponding circuitry (Column 1, lines 1-40 & Column 2, lines 1-27 & Fig. 1, elements 2, 4). Therefore, it would have been

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obvious to one of ordinary skill in the art at the time of the invention that Lee discloses an interface circuitry that can be implemented in the line driver as described in Sampei in view of Sevic so as to avoid incompatibility (saturation) between the voltage swing level of the input signal and the switching (varying) supply voltage of the driver circuitry, thus satisfying the limitation of the claims.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sudhanshu C. Pathak whose telephone number is (703) 305-0341. The examiner can normally be reached (Monday-Friday from 8:30 AM to 5:30 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin, can be reached at (703) 305-4714.

Any response to this action should be mailed to:

- Commissioner of Patents and Trademarks Washington, D.C. 20231

Or faxed to:

- (703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to:

- Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor
(Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to:

Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

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STEPHEN CHIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600